CLAIMS

What is claimed and desired to be secured by letters of patent is:

1.   An interactive play device for interacting between the device and the user comprising:

means to generate a plurality of interactions for providing interactive effects with the user,

a plurality of input control mechanisms for the user to interact with the device,

memory means to store user's responses to said interactions,

means to derive or define knowledge information that includes normal responses to interactions,

evaluation means to assess the user's response to the last interaction for classifying into one of a plurality of categories, wherein a first category corresponds to a normal response, and at least a second category corresponds to a response that is different from the normal response,

controlling means to operate the device in a plurality of states, and to transform the device from an initial state to a desired state, based on evaluated responses to interactions.

2.   An interactive play device as recited in claim 1 further comprising a housing.

3.   An interactive play device as recited in claim 1, wherein said means to derive knowledge information includes means to process stored responses to interactions,

4.   An interactive play device as recited in claim 2 wherein said housing is in the form of a doll, animal, action figure, story or fairytale character, historic character, monster character, alien or extraterrestrial character, heroic character, religious character, movie or television character, or cartoon character.

5.   An interactive play device as recited in claim 4 wherein said plurality of states includes states during which the device mimics human-like behavior.

6.   An interactive play device as recited in claim 5 wherein said human-like behavior includes happy, sad, angry and/or surprised states.

7.   An interactive play device as recited in claim 2 wherein said housing is in the form of a car, truck, van, motorcycle, military tank, train, ship or plane.

8.   An interactive play device as recited in claim 7 wherein said plurality of states includes states during which the device mimics android behavior.

9.   An interactive play device as recited in claim 1 further comprising means to modify stored responses associated with interactions.

10.   An interactive play device as recited in claim 1 further comprising predefined knowledge information associated with interactions.

11.   An interactive play device as recited in claim 1 further comprising means to determine confidence levels associated with knowledge information.

12.   An interactive play device as recited in claim 1 wherein the device further operates in a plurality of operating modes.

13.   An interactive play device as recited in claim 12 wherein said operating modes include a learning mode and an acting mode.

14.   An interactive play device as recited in claim 1 wherein said controlling means are further based on random elements.

15.   An interactive play device as recited in claim 1 wherein said means to generate a plurality of interactions include communicating means.

16.   An interactive play device as recited in claim 15 wherein said communicating means is visual.

17.   An interactive play device as recited in claim 16 wherein said visual communication is implemented using a Liquid Crystal Display, a CRT display, or light emitting means in different colors.

18.   An interactive play device as recited in claim 15 wherein said communicating means is aural.

19.   An interactive play device as recited in claim 1 wherein said plurality of input control mechanisms includes a computer keyboard, touch screen controls, or a computer mouse with associated controls.

20.   An interactive play device for interacting between the device and the user comprising:

a housing,

a microprocessor,

a control program executed on the processor,

a program segment that generates a plurality of interactions for providing interactive effects with the user,

a plurality of input control mechanisms to enable the user to operate or interact with the device,

computer memory to store user's responses to interactions,

a program segment to process said stored responses in order to define or derive knowledge information that includes normal responses associated with interactions,

a program segment to evaluate the user's response to the last interaction for classifying into one of a plurality of categories, wherein a first category corresponds to a normal response, and at least a second category corresponds to a response that is different from the normal response, and

a program segment to control the device to operate in a plurality of states, and to transform the device from an initial state to a desired state based on evaluated responses.

21. An interactive play device as recited in claim 20, wherein said program segment to derive knowledge information is based on the manner in which the user has responded to interactions.

22. An interactive play device as recited in claim 20 wherein said interactive effects include replies by the device responsive to the activation of input control mechanisms.

23. An interactive play device as recited in claim 20, wherein said user's responses to interactive effects consist of the activation of switches on a remote control apparatus.

24. An interactive play device as recited in claim 20, wherein said user's responses to interactive effects consist of the activation of accessories associated with the device.

25. A play device as recited in claim 20, wherein said user's responses to interactive effects consist of plugging in or connecting accessories into the device.

26. An interactive play device as recited in claim 20 wherein said housing is in the form of a doll, animal, action figure, story or fairytale character, historic character, monster character, alien or extraterrestrial character, heroic character, religious character, movie or television character, or cartoon character.

27. An interactive play device as recited in claim 20 wherein said housing is in the form of a car, truck, van, motorcycle, military tank, train, ship or plane.

28. An interactive play device for interacting between the device and the user comprising:

a housing,

a microprocessor,

a control program executed on the processor to control the operation of the device,

a control program segment that generates a plurality of interactions for providing interactive effects with the user in the form of verbal requests, movements, visual effects, or sound effects,

a plurality of push buttons, switches, pressure switches, touch switches, sensors, voice activated switches, push buttons located on a remote control apparatus, or accessories that can be plugged into the device to enable a user to interact with the device,

computer memory to store user's responses to interactions,

a control program segment to define or derive knowledge information that includes normal responses to interactions,

a control program segment to evaluate the user's response to the last interaction for classifying into one of a plurality of categories, wherein a first category corresponds to a normal response, and at least a second category corresponds to a response that is different from the normal response, and

a program segment to control the device to operate in a plurality of states, and to transform the device from an initial state to a desired state based on evaluated responses.

29. An interactive play device as recited in Claim 28, wherein said control program segment to derive knowledge information includes the processing of stored responses to interactions.

30. An interactive play device as recited in claim 28 further comprising a program segment to modify knowledge information associated with an interaction.

31. An interactive play device as recited in claim 28 further comprising a program segment to determine confidence levels associated with knowledge information.

32. An interactive play device as recited in claim 28 wherein said housing is in the form of a doll, animal, action figure, story or fairytale character, historic character, monster character, alien or extraterrestrial character, heroic character, religious character, movie or television character, or cartoon character.

33. An interactive play device as recited in claim 28 wherein said housing is in the form of a car, truck, van, motorcycle, military tank, train, ship or plane.

34. An interactive play device as recited in claim 28 wherein the device further operates in a plurality of operating modes.

35. An interactive play device as recited in claim 31 wherein said plurality of states includes states during which the device mimics human-like behavior.

36. An interactive play device as recited in claim 35 wherein said human-like behavior includes happy, sad, angry, amused, joyful, or surprised.

37. An interactive play device as recited in claim 33 wherein said plurality of states includes states during which the device mimics android behavior.

38. An interactive play device as recited in claim 37 wherein said states during which the device mimics android behavior includes amused, annoyed, grumpy, alert, refuse or surprised states.

39. An interactive play device as recited in claim 34, wherein said plurality of operating modes includes a learning mode and an acting mode.

40. An interactive play device as recited in claim 32 wherein said categories includes familiar and odd.

41. An interactive play device as recited in claim 33 wherein said categories includes clever and flimsy.

42. An interactive play device as recited in claim 32 wherein said sensors include magnetic sensors.

43. An interactive play device as recited in claim 42 wherein said magnetic

sensors are activated by a magnet.

44. An interactive play device as recited in claim 32 wherein said sensors include proximity sensors.

45. An interactive play device as recited in claim 28 further comprising voice recognition modules.

46. An interactive play device as recited in claim 33 wherein said interactive effects includes a plurality of pre-programmed movements.

47. An interactive play device as recited in claim 28 further comprising means to communicate with a similar device.

48. An interactive play device as recited in claim 47, further comprising program segment to generate a plurality of interactions for providing interactive effects with a similar device.

49. An interactive play device for interacting between the device and the user comprising:

a micro-controller that controls the device,

control logic that generates a plurality of interactions for providing interactive effects with the user,

data stored in the memory of the micro-controller, and which consists of knowledge information that includes predefined normal responses to interactions,

a plurality of pressure switches, touch switches, magnetic switches, sensors, push buttons located on a remote control apparatus, accessories that can be plugged into the device, or voice activated switches to enable the user to interact with the device,

computer memory to store user's responses to interactions,

control logic to evaluate the user's response to the last interaction for classifying into one of a plurality of categories, wherein a first category corresponds to said predefined normal response, and at least a second category corresponds to a response that is different from the normal response, and

a program segment to control the device to operate in one of a plurality of operating states, and to transform the device from an initial state to a desired state based on evaluated user's responses.

50. An interactive play device as recited in claim 49 further comprising

control logic, which provides knowledge information that reflects the manner in which the user has responded to interactions.

51. An interactive play device as recited in claim 49 wherein said housing is in the form of a doll, animal, action figure, story or fairytale character, historic character, monster character, alien or extraterrestrial character, heroic character, religious character, movie or television character, or cartoon character.

52. An interactive play device as recited in claim 49, wherein said housing is in the form of a car, truck, van, motorcycle, military tank, train, ship or plane.

53. An interactive play device as recited in claim 20 having a body in the form of a human child with a translucent outer surface or skin, further comprising a plurality of light emitting diodes mounted inside the doll's body to provide a plurality of skin color effects for the doll, and wherein a first skin color effect corresponds to one operating state, and a second skin color effect corresponds to a second operating state.

54. An interactive doll device as recited in claim 53 further comprising radio receiver mounted inside the doll's body to receive a radio-control signal from a transmitter unit located remotely from said doll.

55. An interactive doll device of claim 54 wherein said input control means are located on the transmitter unit.

56. An interactive play device as recited in claim 28 having a body in the form of a human child with a translucent outer surface or skin, further comprising means to provide a plurality of skin color effects for the doll, and wherein a first skin color effect corresponds to one operating state, and a second skin color effect corresponds to a second operating state.

57. An interactive doll device as recited in claim 56, wherein said user's responses to interactive effects consist of the activation of accessories associated with the device.

58. A play device as recited in claim 56 wherein said user's responses to interactive effects consist of plugging in or connecting accessories into the device.

59. An interactive doll device, as recited in claim 56, further comprising a

42

receiver to receive signals from a transmitter unit located remotely from said doll.

60. An interactive doll device as recited in claim 59 wherein said input control mechanisms are located on the transmitter unit.

61. An interactive doll device as recited in claim 56, wherein said controlling means are further based on random elements.